REMARKS

Claims 3-12 and 15 - 25 are pending and under consideration in the above-identified application. Claims 1, 2, 13 and 14 having been cancelled previously.

In the Office Action dated August 18, 2008, the Examiner rejected claims 3-12, and 15-15.

With this Amendment, claims 3 and 15 were amended. No new matter has been introduced as a result of the amendments.

I. 35 U.S.C. § 112 Indefiniteness Rejection of Claims

Claim 3 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner stated that there is insufficient antecedent basis for the limitation, "said first ridge-shaped layer and said second-ridge shaped layer" in claim 3. Per the Examiner's suggestion, the Applicants amended the claims to provide sufficient antecedent basis for the limitation. Accordingly, the Examiner's objection is now moot. As such, Applicant respectfully requests that the above rejection be withdrawn.

II. 35 U.S.C. § 103 Obviousness Rejection of Claims

Claims 3-12 and 15-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyake (JP 11-251678) in view of Yabusaki et al. (U.S. Publication No. 2002 0117680) and Nagai (U.S. Patent No. 5,892,785). Applicant respectfully traverses this rejection.

The claims require a conductivity type second cladding layer on the active layer, a part thereof having a ridge-shaped portion as a current narrowing structure. The ridge-shaped portion includes a first ridge-shaped layer that has a higher bandgap than the first cladding layer and a second ridge-shaped layer having a relatively low bandgap. As explained in the Specification, the configuration of the ridge-shaped portion having a layer with a low refractive index and a

layer with a high refractive index allows the refractive index profile affecting the beam shape to be adjustable. Specification, Paragraph [0030].

Additionally, the claims require an aluminum composition ratio X1 of said first ridge-shaped layer is $0.60 \leq X1 \leq 0.70$, and an aluminum composition ratio X2 of said second ridge-shaped layer is $X2 \leq X1$. As the Applicant's specification discloses, providing an aluminum composition ratio X1 of a first ridge-shaped layer being $0.60 \leq X1 \leq 0.70$, and an aluminum composition ratio X2 of a second ridge-shaped layer being $X2 \leq X1$ is critical to reducing the amount of current leaked from. Specification, Paragraphs [0056]-[0057].

Miyake teaches a semiconductor with a second cladding layer having a ridge-shaped portion. Miayke, Paragraph [0009]. However, Miyake et al. fails to teach or even fairly suggest a first ridge-shaped layer having an aluminum composition ratio of X1, where $0.60 \leq X1 \leq 0.70$, and a second ridge-shaped layer having an aluminum composition ratio of X2, where $X2 \leq X1$. As such, Miyake et al. fails to teach or even fairly suggest a semiconductor that is capable of reducing the amount of current leaking

Additionally, Miayke fails to teach or even fairly suggest a first ridge-shaped that the layer that has a higher bandgap than the first cladding layer and a second ridge-shaped layer having a relatively low bandgap. The Examiner stated that it would have been obvious to modify the bandgap of the first ridge layer with respect to the first cladding layer. Applicant disagrees and requests the Examiner provide proof that such modification would have been obvious to one of ordinary skill in the art.

Yabusaki et al. teaches an upper cladding layer that has an aluminum content that is higher than the aluminum content of the *contact forming* layer. Furthermore, Yabusaki et al teaches that the aluminum content of the contact forming layer is equal to the aluminum content

of the upper cladding layer and decreases in content as the contact forming layer becomes closer to the contact layer. Yabusaki et al., Paragraph [0042] & Fig. 5. Yabusaki et al. also teaches that the content of aluminum is varied to decrease the etching speed. As such, Yabusaki et al. fails to teach or even fairly suggest an aluminum composition ratio X1 of said first ridge-shaped layer is $0.60 \leq X1 \leq 0.70$, and an aluminum composition ratio X2 of said second ridge-shaped layer is $X2 \leq X1$ as required by the claims. Additionally, Yabusaki et al. does not teach a reduction in the current leaking as discussed above.

Nagai discloses an AlAs oxide layer that has a higher aluminum composition than the first upper cladding layer and the second upper cladding layer. Nagai, Col. 10, lines 40-45. Although Nagai teaches an aluminum composition for the AlAs oxide layer that is more than 0.8, Nagai fails to teach or even fairly suggest the aluminum composition for either the first ridge-shaped layer or the second ridge-shaped layer as required by the claims.

As such, the cited references fail to teach or even fairly suggest all the requirements of the claims either singularly or in combination with each other. As such, Applicant respectfully requests that the above rejections be withdrawn.

III. Conclusion

In view of the above amendments and remarks, Applicants submit that all claims are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect.

Respectfully submitted,

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